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RESEARCH INTERESTS:

Biophysics, soft condensed matter, materials modeling, nonlinear and non-equilibrium dynamics, complex fluids, pattern formation, random networks.

EDUCATION:

- Ph.D. 1998 Physics, University of Notre Dame.
Dissertation: *Cellular Pattern Formation*
Advisor: *James A. Glazier*
B.S. 1993 Physics, University of Science and Technology of China.
Thesis: *Optical Properties of Nano-Oxides ZnO₂ and SnO₂*
Advisors: *C. Shi (Physics) & D. Wang (Materials Science and Engineering)*

EXPERIENCE:

- 3/2001 - present Research Staff, Theoretical Division, Los Alamos Natl. Lab.
9/1998 - 3/2001 Postdoctoral Research Associate, Theoretical Division, Los Alamos Natl. Lab.
6/1996 - 12/1999 Consultant (part time), IOTA. Inc, Delaware.
9/1994 - 8/1998 Research Assistant, Dept. of Physics, Univ. of Notre Dame.
5/1997 - 8/1997 Graduate Research Assistant, Center for Nonlinear Studies, Los Alamos Natl. Lab.
8/1996 - 9/1996 Visiting Student, Inst. for Nonlinear Studies, Univ. of California, San Diego.
5/1996 - 8/1996 Graduate Research Assistant, Center for Nonlinear Studies, Los Alamos Natl. Lab.
6/1995 - 9/1995 Graduate Research Assistant, Center for Nonlinear Studies, Los Alamos Natl. Lab.
9/1993 - 5/1994 Teaching Assistant, Dept. of Physics, Univ. of Notre Dame.
6/1990 - 6/1993 Undergraduate Research Assistant, Dept. of Physics & Dept. of Materials Science and Engineering, Univ. of Science and Technology of China, China.

OTHER EXPERIENCE:

- 3/2000 - 5/2000 Modeling of Biological Systems, Marine Biological Lab, Woods Hole, MA.
6/1996 - 6/1996 Complex Systems Summer School, Santa Fe Institute, NM.

PROFESSIONAL ACTIVITIES:

- Session Chair, *Dynamics of Interfaces, Patterns and Domains '99*, Los Alamos, April 22-24, 1999.
- Co-Organizer, *Nonlinear Phenomena in Complex Systems Workshop*, Los Alamos, May 17-18, 1999.
- Referee for Physical Review Letters, Physical Review E, Physical Review B (1995-present)
Physica D (1996-present) and Biophysical Journal (1999-present).

MEMBERSHIP:

- Member of American Physical Society
- Member of Biophysical Society
- Member of Materials Research Society
- Member of Society for Industrial and Applied Mathematics

INVITED TALKS AND COLLOQUIA:

- “Multiscale modeling lipid membranes”
Department of Physics, University of South Florida, Tampa, FL (February 2001).
- “Modeling Soft Materials – Multiscale Modeling”
Department of Chemistry, Virginia Tech, Blacksburg, VA (January 2001).
- “Influence of filler particles on phase separating polymer blends”
Virginia Tech, Blacksburg, VA (January 2001).
- “Lipid Membrane Modeling”
Department of Physics, Indiana University, Bloomington, IN (January 2001).
- “Multiscale modeling of lipid membranes”
Department of Physics, Emory University, Atlanta, GA (October 2000).
- “Foam energy and rheology”
Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD (October 2000).
- “Filler induced phase separation morphology in polymer blends”
CNLS/CNCS Workshop, Center for Nonlinear and Complex Systems, Duke University, Durham, NC (October 2000).
- “Foam Rheology”
Department of Physics, Virginia Tech, Blacksburg, VA (October 2000).
- “A coarse-grained molecular dynamics model for lipid membranes”
Department of Chemistry, Virginia Tech, Blacksburg, VA (October 2000).
- “Multiscale modeling of lipid membranes”
Department of Physics, University of Missouri, Columbia, MO (September 2000).
- “Hard problems in soft matter: mesoscopic modeling”
Computational Sciences and Information Technology, Florida State University, Tallahassee, FL (September 2000).
- “Energy and Rheology of Foams”
ISIS/Department of Physics, UC Irvine, CA (February 2000).
- “Foams and the isoperimetric problem”
Arizona Days, Center for Nonlinear Studies, Los Alamos, NM (January 2000).
- “Kinetics of phase separation on a deformable membrane”
Kansas Institute of Computational and Theoretical Science, Lawrence, KS (December 1999).
- “Phase separation and shape deformation of membranes”
Department of Physics, Kansas State University, Manhattan, KS (September 1999).
- “Dynamics of Foam Flow”
Nonlinear Phenomina in Complex Systems Workshop, Los Alamos, NM (May 1999).
- “Hysteresis and avalanches in foams”
Department of Chemical Engineering, University of Pittsburgh, Pittsburgh, PA (May 1998).

- “Foam drainage: theory and simulations”
Center for Nonlinear Sciences, Hong Kong Baptist University, Hong Kong (January 1998).
- “Cooperation of differential adhesion and chemotaxis in the mound of *Dictyostelium*”
RIEC, Tohoku University, Sendai, Japan (December 1997).
- “Stress and hysteresis in the extended Potts model”
Materials Theory and Computation, Sandia National Lab, Albuquerque, NM (January 1997).

CONFERENCE PRESENTATIONS:

- “Interference of filler induced composition waves in polymer blend”
APS March Meeting, Seattle, WA (March 2001).
- “Stress distribution in fluid foams”
APS March Meeting, Seattle, WA (March 2001).
- “Influence of Filler Particles and Clusters in Phase Separating Polymer Blends” (Poster)
MRS Fall Meeting, Boston, MA (November 2000).
- “Phase Separation Induced Morphology Evolution in Lipid Membranes”
APS March Meeting, Minneapolis, MN (March 2000).
- “Energy-landscape of fluid foams”
APS March Meeting, Minneapolis, MN (March 2000).
- “Deformation of elastic membranes induced by phase separation”
Biophysics Society Annual Meeting, New Orleans, LA (February 2000).
- “Role of curvature in phase separation and deformation of elastic membranes” (Poster)
Dynamics Days 2000, Santa Fe, NM (January 2000).
- “Phase separation and deformation on a two-phase membrane” (Poster)
Center for Nonlinear Studies Annual Meeting, Los Alamos, NM (May 1999).
- “Phase separation on a two-dimensional membrane”
Dynamics of Interfaces, Patterns and Domains '99, Los Alamos, NM (April 1999).
- “Shape and Phase of Cell Membranes”
Center for Nonlinear Studies Forum, Los Alamos, NM (April 1999).
- “Lattice model for cell sorting”
SCRI Monte Carlo Workshop, Tallahassee, FL (March 1999).
- “Kinetics of phase separation on deformable membranes”
APS March Meeting, Atlanta, GA (March 1999).
- “Modeling tip formation in *Dictyostelium* mound”
Arizona Days Workshop, University of Arizona, Tucson, AZ (January 1999).
- “Dynamics and disorder in 2D foam rheology simulations”
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (April 1998).
- “Cell sorting in the mound stage of *Dictyostelium*”
APS March Meeting, Los Angles, CA (March 1998).

- “Monte Carlo study of 2D foam under stress”
APS March Meeting, Los Angles, CA (March 1998).
- “Modeling foam drainage”
Center for Applied Math, University of Notre Dame, Notre Dame, IN (February 1998).
- “Two-dimensional grain growth under stress”
MRS Fall meeting, Boston, MA (December 1997).
- “Differential adhesion *vs.* chemotaxis in mound formation of *Dictyostelium*”
International *Dictyostelium* Conference, Snowbird, UT (August 1997).
- “Foam drainage and its connection to flow in porous media”
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (August 1997).
- “From chicken cells to slime mold: how cells know where to go”
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (July 1997).
- “Hysteresis of cellular pattern under stress”
APS March Meeting, Kansas City, MO (March 1997).
- “Foam drainage: extended large-Q Potts model simulations and a mean field theory”
MRS Fall Meeting, Boston, MA (December 1996).
- “Dynamics of cellular pattern formation”
Complex Systems Summer School, Santa Fe, NM (June 1996).
- “Cellular pattern formation in foams and cells”
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (May 1996).
- “Anomalous grain growth and special scaling state in a two-dimensional growth”
APS March Meeting, St. Louis, MO (March 1996).
- “Slow positron annihilation study of nano-TiN films” (Poster)
MRS Fall Meeting, Boston, MA (December 1993).
- “Infrared absorption study of N ion implanted silicon” (Poster)
MRS Fall Meeting, Boston, MA (December 1993).

PUBLICATIONS:

1. Y. Jiang and J.F. Douglas, *Interference of composition wave induced by filler particles in polymer blends*, in preparation (2001).
2. Y. Jiang, T. Lookman, A. Saxena, and R. C. Desai, *Kinetics of phase separation on deformable membranes*, in preparation (2001).
3. Y. Jiang, M. Aubouy, J. A. Glazier, and F. Graner, *Crystals, amorphous materials and complex fluids: their elasticity and plasticity*, in preparation (2001).
4. F. Graner, Y. Jiang, E. Janiaud, and C. Flament, *Equilibrium states and ground state of 2D fluid foams*, Phys. Rev. E, **6301**, 1402 (2001).
5. Y. Jiang, T. Lookman, A. Saxena, and J. F. Douglas, *Influence of filler particles and cluster geometry on phase-separating polymer blends*, submitted (2000).

6. Y. Jiang, J. A. Glazier and F. Graner, *Stress distribution in 2D fluid foams: Visualization*, submitted (2000).
7. Y. Jiang, M. Asipauskas, J. A. Glazier, and F. Graner, *Ab Initio derivation of mesoscopic stress and stain in foams*, in *Foams, Emulsions and their Applications*, P. Zitha, J. Banhart and G. Verbist editors (Verlag MIT Publishing, Bremen, Germany, 2000), 297-304.
8. Y. Jiang, E. Janiaud, C. Flament, J. A. Glazier, and F. Graner, *Energy landscape of 2D fluid foams*, in *Foams, Emulsions and their Applications*, P. Zitha, J. Banhart and G. Verbist editors (Verlag MIT Publishing, Bremen, Germany, 2000), 321-327.
9. Y. Jiang, T. Lookman, and A. Saxena, *Phase Separation and Shape Deformation on membranes*, *Biophys. J.*, **78**, 1068 (2000).
10. Y. Jiang, T. Lookman, and A. Saxena, *Phase Separation and Shape Deformation on a Two-Phase Membrane*, *Phys. Rev. E Rapid Comm.* **61**, R57 (2000).
11. Y. Jiang, P. Swart, A. Saxena, M. Asipauskas, and J. A. Glazier, *Hysteresis and Avalanches in Two Dimensional Foam Rheology Simulations*, *Phys. Rev. E* **59**, 5819 (1999).
12. F. Elias, C. Flament, J. A. Glazier, F. Graner and Y. Jiang, *Foams Out of Stable Equilibrium: Cell Elongation and Side Swapping*, *Phil. Mag. B* **79**, 729 (1999).
13. Y. Jiang, H. Levine, and J. A. Glazier, *Possible Collaboration of Differential Adhesion and Chemotaxis Cooperate in Mound Formation of Dictyostelium*, *Biophys. J.* **75**, 2615 (1998).
14. Y. Jiang and J. A. Glazier, *Foam Drainage: Extended Large-Q Potts Model Simulation and a Mean Field Theory*, Proceedings of MRS Fall Meeting'96 **463**, 307 (1997).
15. Y. Jiang and J. A. Glazier, *Extended Large-Q Potts Model Simulation of Foam Drainage*, *Phil. Mag. Lett.* **74**, 119 (1996).
16. Y. Jiang, J. C. M. Mombach and J. A. Glazier, *Grain Growth From Homogeneous Initial Conditions: Anomalous Grain Growth and Special Scaling States*, *Phys. Rev. E Rapid Comm.* **52**, R3333 (1995).
17. H. Weng, D. Wang, Y. Jiang and X. Liu, *Low Energy Positron Beam Studies of Nano-TiN Films*, *Mat. Sci. Eng. B* **26**, 163 (1994).
18. D. Wang, Y. Jiang, S. Zhang and R. Fang, *The Microstructure of Nano-SnO₂*, *Trans. Mat. Res. Soc. Jpn.* **16B**, 1563 (1993).
19. D. Wang, H. Chen and Y. Jiang, *X-Ray Diffractions of Nanocrystals*, *Trans. Mat. Res. Soc. Jpn.* **16B**, 1551 (1993).
20. D. Wang, Y. Jiang, H. Chen, W. Liu and R. Fang, *Monte Carlo Simulation of the Structure of Nanophase Materials*, *Trans. Mat. Res. Soc. Jpn.* **16A**, 179 (1993).
21. D. Wang, J. Yang, and Y. Jiang, *Infrared Absorption Study of N Ion Implanted Silicon*, Proceedings of MRS Fall meeting (1993).
22. H. Wen, D. Wang, and Y. Jiang, *Slow Positron Annihilation Study of Nano-TiN Films*, Proceedings of MRS Fall meeting (1993).
23. D. Zhang, B. Yang, and Y. Jiang, *Mössbauer Study of the High-Temperature BiPbSrCaCuSnO Superconductor*, *Solid State Comm.* **83**, 999 (1992).

24. D. Zhang and Y. Jiang, *Application of Mössbauer Effect on Characterization of Nano-Crystalline SnO₂*, Proceedings of Intl. Conf. on the Appl. Mössbauer Effects, Hefei, China (1991).

REFERENCES

The following people are familiar with various aspects of my research, and are available for comments.

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